

AMENDMENTS TO THE CLAIMS

1. (previously withdrawn) A method of inducing blood vessel formation in an animal, comprising: administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
2. (currently amended) A method of inducing blood vessel formation in an animal, comprising administering to said animal an effective amount of a sphingosine kinase, The method of Claim 1 wherein said sphingosine kinase, or analogue, fragment, or derivative thereof is administered to said animal by administering to said animal a polynucleotide encoding sphingosine kinase, or an analogue, fragment, or derivative thereof.
3. (currently amended) The method of Claim 2 wherein said polynucleotide encoding a sphingosine kinase, ~~or an analogue, fragment, or derivative thereof~~ is administered to said animal by administering to said animal an expression vehicle including said polynucleotide encoding a sphingosine kinase, ~~or an analogue, fragment, or derivative thereof~~.
4. (original) The method of Claim 3 wherein said expression vehicle further includes a polynucleotide encoding a protein selected from the group consisting of VEGF, FGF, IGF, angiopoietins, PD-EGF, TGF- β , HIF1- α , nitric oxide synthase, MCP-1, Interleukin-8, ephrins, NAP-2, ENA-78, GROW- α , and active fragments of tyrosyl-tRNA synthetase.
5. (original) The method of Claim 3 wherein said expression vehicle is a viral vector.
6. (original) The method of Claim 5 wherein said viral vector is an adenoviral vector.
7. (original) The method of Claim 5 wherein said viral vector is a lentiviral vector.

8. (original) The method of Claim 5 wherein said viral vector is a BIV vector.
9. (original) The method of Claim 6 wherein said adenoviral vector is administered to said animal in an amount of from about 10^7 plaque forming units to about 10^{12} plaque forming units.
10. (original) The method of Claim 9 wherein said adenoviral vector is administered to said animal in an amount of from about 5×10^8 plaque forming units to about 2×10^{11} plaque forming units.
11. (original) The method of Claim 7 wherein said lentiviral vector is administered to said animal in an amount of from about 5×10^5 transducing units to about 10^{12} transducing units.
12. (original) The method of Claim 11 wherein said lentivirus vector is administered to said animal in an amount of from about 5×10^5 transducing units to about 10^{12} transducing units.
13. (original) The method of Claim 8 wherein said lentiviral vector is administered to said animal in an amount of from about 5×10^5 transducing units to about 10^{10} transducing units.
14. (original) The method of Claim 13 wherein said adenoviral vector is administered to said animal in an amount of from about 5×10^5 transducing units to about 10^{10} transducing units.
15. (previously withdrawn) The method of Claim 1 wherein said animal is a mammal.
16. (previously withdrawn) The method of Claim 15 wherein said mammal is a primate.
17. (previously withdrawn) The method of Claim 16 wherein said primate is a human.

18. (previously withdrawn) A viral vector including a polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof.
19. (previously withdrawn) The vector of Claim 18 wherein said viral vector further includes a polynucleotide encoding a protein selected from the group consisting of VEGF, FGF, IGF, angiopoietins, PD-EGF, TGF- α , HIF1- α , nitric oxide synthase, MCP-1, Interleukin-8, and ephrins.
20. (previously withdrawn) The vector of Claim 18 wherein said vector is an adenoviral vector.
21. (previously withdrawn) The vector of Claim 18 wherein said viral vector is a lentiviral vector.
22. (previously withdrawn) The vector of Claim 18 wherein said viral vector is a BIV vector.
23. (cancelled) A method of expressing sphingosine kinase in an animal, comprising:
 - administering to said animal a polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof.
24. (cancelled) The method of Claim 23 wherein said polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof is administered to said animal by administering to said animal an expression vehicle including said polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof.
25. (cancelled) The method of Claim 24 wherein said expression vehicle is a viral vector.
26. (cancelled) The method of Claim 25 wherein said viral vector is an adenoviral vector.
27. (cancelled) The method of Claim 25 wherein said viral vector is a lentiviral vector.

28. (cancelled) The method of Claim 25 wherein said viral vector is a BIV vector.
29. (previously withdrawn) A method for the prevention or the treatment of congestive heart failure in an animal comprising administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
30. (previously withdrawn) A method for the prevention or the treatment of myocardial ischemia in an animal comprising administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
31. (previously withdrawn) A method for the treatment of ischemia-reperfusion injury in an animal comprising administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
32. (previously withdrawn) A method for the treatment of peripheral arterial diseases in an animal comprising administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
33. (currently amended) A method for the prevention or treatment of congestive heart failure or myocardial ischemia, or for the treatment of ischemia-reperfusion injury or peripheral arterial diseases in an animal comprising administering to said animal an effective amount of a sphingosine kinase, ~~The method of Claim 29, 30, 31 or 32 wherein said sphingosine kinase, or analogue, fragment, or derivative thereof is administered to said animal by administering to said animal a polynucleotide encoding sphingosine kinase, or an analogue, fragment, or derivative thereof.~~

34. (currently amended) The method of Claim 33 wherein said polynucleotide encoding a sphingosine kinase, ~~or an analogue, fragment, or derivative thereof~~ is administered to said animal by administering to said animal an expression vehicle including said polynucleotide encoding a sphingosine kinase, ~~or an analogue, fragment, or derivative thereof~~.
35. (original) The method of Claim 34 wherein said expression vehicle further includes a polynucleotide encoding a protein selected from the group consisting of VEGF, FGF, IGF, angiopoietins, PD-EGF, TGF- β , HIF1- α , nitric oxide synthase, MCP-1, Interleukin-8, and ephrins.
36. (original) The method of Claim 34 wherein said expression vehicle is a viral vector.
37. (original) The method of Claim 36 wherein said viral vector is an adenoviral vector
38. (original) The method of Claim 36 wherein said viral vector is a lentiviral vector.
39. (original) The method of Claim 36 wherein said viral vector is a BIV vector.
40. (previously withdrawn) The method of Claim 29, 30, 31 or 32 wherein said animal is a mammal.
41. (previously withdrawn) The method of Claim 40 wherein said mammal is a primate.
42. (previously withdrawn) The method of Claim 41 wherein said primate is a human.
43. (new) The method of Claim 2 wherein said sphingosine kinase is selected from the group consisting of human SPHK1 and SPHK2, mouse

SPHK1 α , SPHK1 β and SPHK2, and rat SPHK1a, SPHK1c, SPHK1d, SPHK1e and SPHK1f.

44. (new) The method of Claim 2 wherein said polynucleotide has an accession numbers selected from the group consisting of AF200328, AF245447, AF068748, AF068749, AF245448, AB049571, AB049572, AB049573, AB049574 and AB049575.
45. (new) The method of Claim 23, wherein said sphingosine kinase is selected from the group consisting of human SPHK1 and SPHK2, mouse SPHK1 α , SPHK1 β and SPHK2, and rat SPHK1a, SPHK1c, SPHK1d, SPHK1e and SPHK1f, comprising:
administering to said animal a polynucleotide encoding a sphingosine kinase.
46. (new) The method of Claim 23 wherein said polynucleotide has an accession numbers selected from the group consisting of AF200328, AF245447, AF068748, AF068749, AF245448, AB049571, AB049572, AB049573, AB049574 and AB049575.